

**Amendment and Response**

Applicant: Frank Wiedmann

Serial No.: 10/756,838

Filed: January 13, 2004

Docket No.: I435.104.101/12881US

Title: METHOD AND DEVICE FOR PRODUCING DELAYED SIGNALS

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**REMARKS**

The following remarks are made in response to the Office Action mailed June 23, 2005. Claims 1, 2, 6, 11, 14, 15, and 17-20 were rejected. Claims 3-5, 7-10, 12, 13, and 16 have been objected to. With this Response, claims 21-26 have been added and claims 1, 3, 5, 7, 12, 14, 16, and 17 have been amended. Claims 1-26 remain pending in the application and are presented for reconsideration and allowance.

**Claim Objections**

The Examiner objected to claims 16 and 17 because of informalities.

Applicant has corrected the informalities with the amendments to claims 16 and 17.

Therefore, Applicant respectfully requests the objection to claims 16 and 17 be removed and that these claims be allowed.

**Claim Rejections under 35 U.S.C. § 102**

The Examiner rejected claims 1-2, 6, 14-15, and 17-19 under 35 U.S.C. § 102(b) as being anticipated by the Eitrheim U.S. Patent No. 5,638,016.

The Examiner rejected claims 1-2, 11, 14-15, 17, and 19-20 under 35 U.S.C. § 102(b) as being anticipated by the Lee U.S. Patent No. 5,686,855.

Applicant has amended independent method claim 1 and independent apparatus claim 14 to include limitations related to forming an output signal from the first and second intermediate signals, wherein the output signal has each rising edge determined by a corresponding edge transitioning in a first direction of the first intermediate signal and having each falling edge determined by a corresponding edge transitioning in the first direction of the second intermediate signal.

As further defined by added new dependent claims 22 and 24, the corresponding edge of the first intermediate signal and the corresponding edge of the second intermediate signal transition in a rising direction in one embodiment. As further defined by added new dependent claims 23 and 25, the corresponding edge of the first intermediate signal and the corresponding edge of the second intermediate signal transition in a falling direction in another embodiment.

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These added limitations are not taught by the Eitrheim patent or the Lee patent.

The Eitrheim patent, as illustrated in Figure 7, has the rising edge of the output signal (Q on S-R latch 28) corresponding to a rising edge of the output of delay line delta 1 and the falling edge of the output signal Q corresponding to a falling edge of the output signal of delay line delta 2. Thus, in the Eitrheim patent, the rising edge of the output signal Q corresponds to an edge transitioning in a first direction of the output signal of delay line delta 1 and the falling edge of the output signal Q corresponding to an edge transitioning in a second direction opposite to the first direction of the output signal of delay line delta 2.

The Lee patent teaches using an exclusive-OR gate to form the edges of the output signal which define the edges of the output signal arbitrarily by the rising or falling edges of the intermediate signals. For example, in Figure 3, the rising edge of the output signal for the period Wa is defined by the rising edge of signal B and the falling edge of the output signal for the period Wa is defined by the rising edge of signal A, while the rising edge of the output signal for the period Wb is defined by the falling edge of signal B and the falling edge of the output signal for period Wb is defined by the falling edge of signal A. Thus, the exclusive-OR gate producing the output signal in the Lee patent can not produce the output signal defined in amended independent claims 1 and 14 where the output signal is formed to have each rising edge determined by a corresponding edge transitioning in a first direction of the first intermediate signal and having each falling edge determined by a corresponding edge transitioning in the first direction of the second intermediate signal.

Since an edge of the intermediate signal transitioning in one direction (e.g., the rising edge) is typically more precisely at the desired point in time than an edge of the intermediate signal transitioning in the opposite direction (e.g., falling edge), the output signal produced by the method of independent claim 1 and the device of independent claim 14 is more precisely timed. For example, in one embodiment, the rising edge of the intermediate signal is more precisely at the desired point in time than the falling edge, because the falling edge of the intermediate signal is dependent on the duty cycle or marked-to-space ratio of the intermediate signals, which may vary due to process variations.

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In view of the above, Neither patent the Eitrheim nor the Lee patent teach or suggest the method of amended independent claim 1 or the device of amended independent claim 14. Furthermore, dependent claims 2, 6, and 11 further define patentably distinct amended independent claim 1. Dependent claims 15 and 17-20 further define patentably distinct amended independent claim 14. Added new dependent claims 22-23 further define patentably distinct amended independent claim 1. Added new dependent claims 24-25 further define patentably distinct amended independent claim 14. Therefore, dependent claims 2, 6, 11, 15, 17-20, and 22-25 are also believed to be allowable.

Therefore, Applicant respectfully requests that the rejections under 35 U.S.C. § 102 to claims 1-2, 6, 11, 14-15, 17-20 be removed and that these claims be allowed. In addition, Applicant respectfully requests that new dependent claims 22-25 be allowed.

**Allowable Subject Matter**

The Examiner objected to claims 3-5, 7-10, 12-13, and 16 for being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Applicant has amended claim 3 to independent form to include allowable limitations from original dependent claim 3 and independent claim 1. Applicant has amended claim 7 to independent form to include allowable limitations of original dependent claim 7 and independent claim 1. Applicant has amended claim 12 to independent form to include allowable limitations of original dependent claim 12 and independent claim 1.

Applicant has amended claim 16 to independent form to include allowable limitations of original dependent claim 16 and independent claim 14.

Applicant has added new independent claim 21 which is a device claim with scope corresponding to amended independent claim 7.

Therefore, amended independent claims 3, 7, 12, and 16 and new independent claim 21 are believed to be in form for allowance. In addition, dependent claims 4-5 further define patentably distinct independent claim 3. Dependent claims 8-10 further define patentably distinct independent claim 7. Dependent claim 13 further defines patentably distinct independent

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claim 12. Added new dependent claim 26 further defines patentably distinct independent claim 16. Therefore, Applicant believes that dependent claims 4-5, 8-10, 13, and 26 are also allowable.

Therefore, Applicant respectfully requests that the objections to claims 3-5, 7-10, 12-13, and 16 be removed and that these claims be allowed. In addition, Applicant respectfully requests that new claims 21 and 26 be allowed.

**CONCLUSION**

In view of the above, Applicant respectfully submits that pending claims 1-26 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 1-26 is respectfully requested.

Applicant hereby authorizes the Commissioner for Patents to charge Deposit Account No. 50-0471 in the amount of \$1,000.00 to cover the fees as set forth under 37 C.F.R. 1.16(h)(i).

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The Examiner is invited to contact the Applicant's representative at the below-listed telephone numbers to facilitate prosecution of this application.

Respectfully submitted,

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By his attorneys,

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**CERTIFICATE UNDER 37 C.F.R. 1.8:** The undersigned hereby certifies that this paper or papers, as described herein, are being deposited in the United States Postal Service, as first class mail, in an envelope address to: Mail Stop Amendment, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on this 23 day of September, 2005.

By   
Name: Patrick G. Billig